Presentation to

Metadata & Scientific Data: Integrating DDE, STTR, and ICSTI Initiatives

Presented by

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The Initiatives

- DOE Office of Scientific and Technical Information (OSTI)
  - DOE Data Explorer
- IIa with DOE Office of Scientific and Technical Information (OSTI)
  - STTR Phase I: Building Blocks for an Ontology to work with an Automated Tool for Locating, Harvesting & Storing S&T Data
  - STTR Phase II: Automated Tool for Locating, Harvesting & Storing S&T Data – Automated Concepts for creating linked data infrastructure and Ontology
- International Council for Scientific and Technical Information (ICSTI) Technical Activities Coordinating Committee (TACC) Project. Participants:
  - DOE OSTI
  - Committee on Data for Science and Technology (CODATA)
  - German National Library of Science and Technology (TIB)
  - Canada Institute for Scientific and Technical Information (CISTI)
  - Univ. of Columbia Center for International Earth Science Information Network (CIESIN)

We already know…

- Since 1945 the US alone has spent over $4.2T on R&D
  - The ROI is in the use of the knowledge and information generated
- Advancing Information Technologies has transformed the scientific landscape
- The Sheer Volume of Scientific Data is overwhelming
- Digital Data is Fragile and not Always Accessible

The Current Landscape

- The products of science and the starting point for new research are increasingly digital and increasingly “born-digital”;
- Exploding volumes and rising demand for data use are driven by the rapid pace of digital technology innovations;
- All sectors of society are stakeholders in digital data management and access

What's the Challenge?

- Scientific and technical data sets distributed in data repositories.
- Internet search engines can help but results are uneven and unreliable.
- URLs alone are not reliable locators of electronic objects.
- Data retrieved from these repositories are more accurate but such databases cannot be crawled easily by search engines and are less likely to be represented in search engine results.
- A federated search interface based on a reliable object identifier, a well-designed metadata framework and ontology can assist with this challenge.

Digital Data Collections & Research

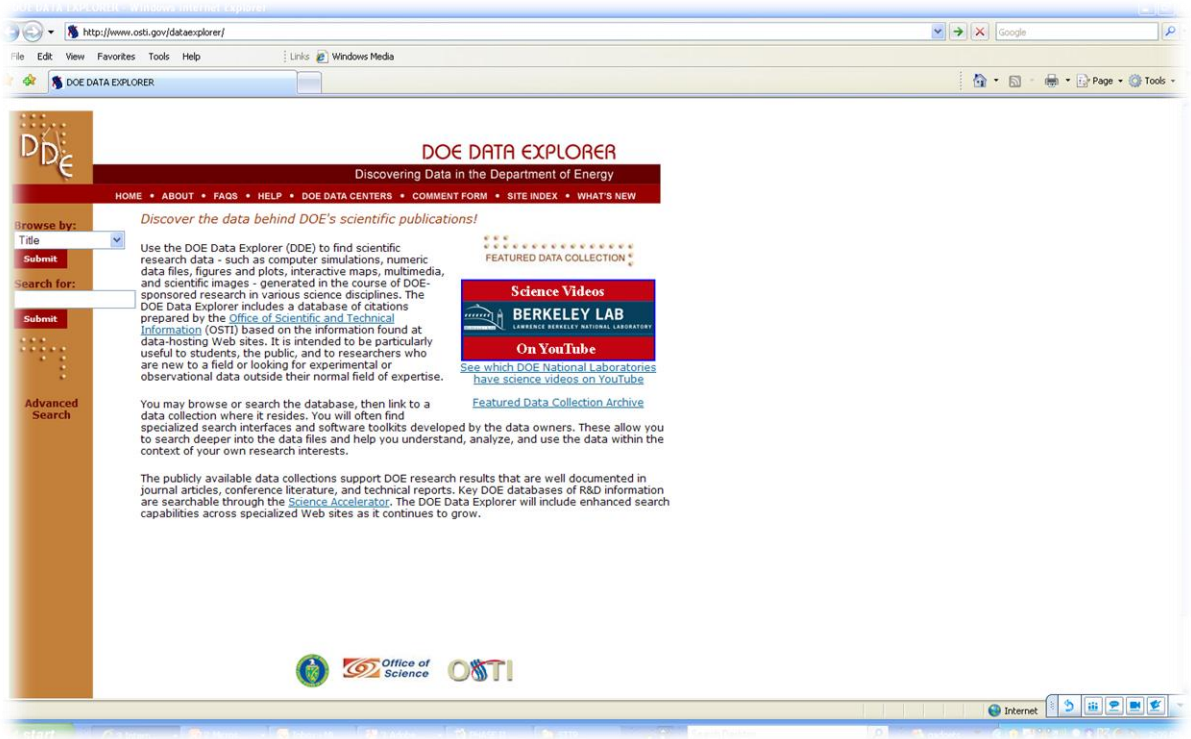
- Digital data are increasingly important as a primary mechanism for scientific output and as a resource for new research

- Digital data collections are a powerful force for inclusion, removing barriers to participation

The Opportunity

- The Office of Scientific and Technical Information (OSTI) created and hosts interfaces that search accurate data repositories from U.S. federal agencies and worldwide organizations -such as the DOE Data Explorer (DDE).
- These efforts will be expanded to provide a tool that supports a more automated, streamlined process for creating and maintaining scientific and technical data repositories.
- Related efforts will be leveraged to provide mechanisms for annotating datasets with relevant metadata

OSTI - DDE



http://www.osti.gov/dataexplorer/

Launched June 2008

Data collections

Fielded search & browseable

242 Collections

icsti

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OSTI

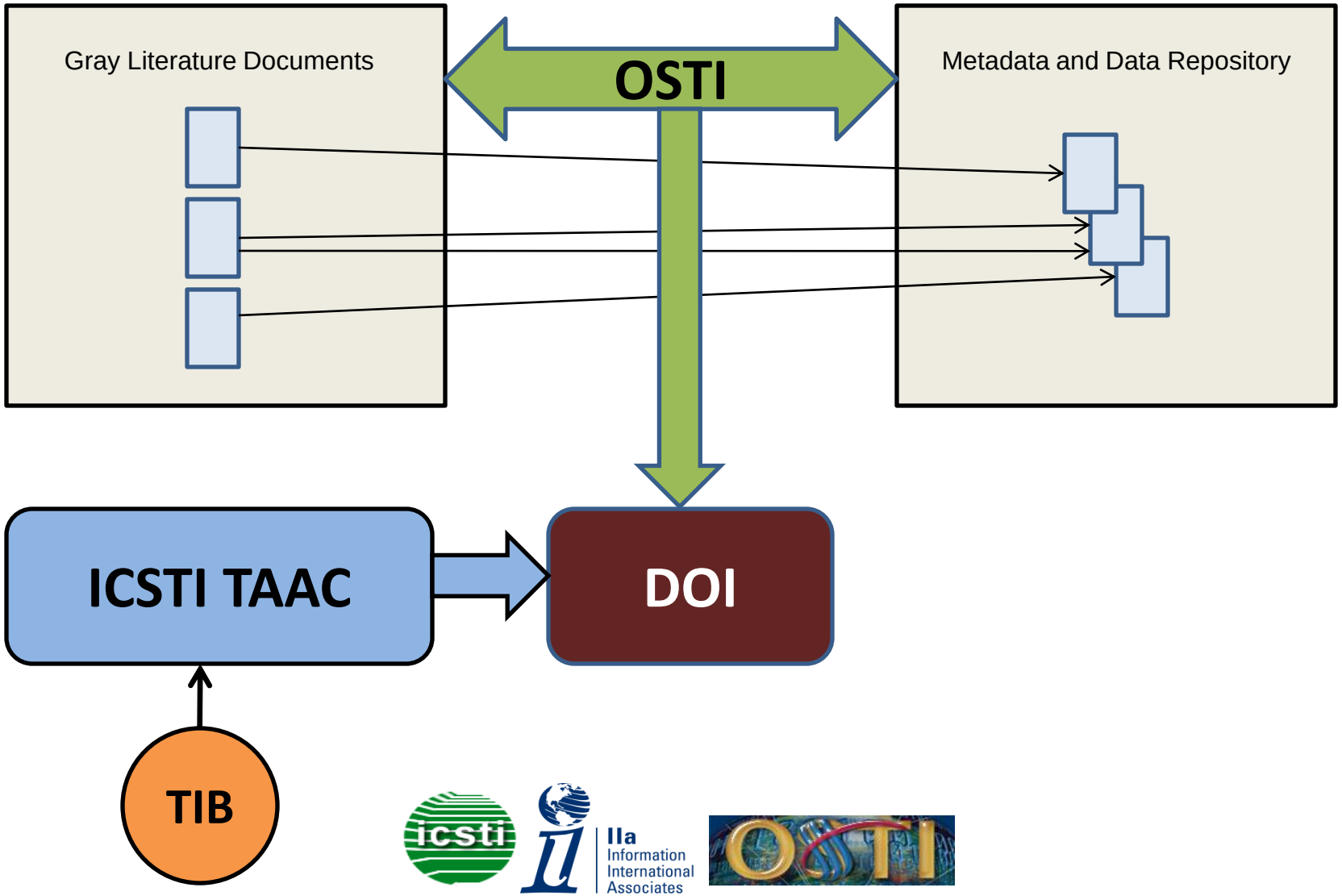
IIa & OSTI – STTR Phase I & II

- Generic basic STI Ontology
- Building blocks for STTR Phase II
- Prototype system that, through Digital Object Identifiers (DOI), automates search and retrieval of numeric datasets used in gray literature.
  - Sample gray literature that cites numeric data sets contained in the identified data sets in DDE.
  - Work on a process for assigning DOIs to numeric data sets and assign DOIs to the DDE data sets using this process.
  - Create DDE version 2 prototype containing the gray literature collection identified in bullet 1 including links to cited numeric data sets per document.
  - Integrate basic S&T Ontology and concepts for federated searching

ICSTI-TACC

- Analyze current limitations in data search and citations
- Demonstrate state-of-the-art data citation practices already in existence
- Demonstrate the integration of numeric data sets through electronic textual information
- Recommend actions for scientific, publishing, and search communities to improve access to numeric data

The Integration



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Conclusion

- These are 3 projects addressing the management of Scientific data.
- There are many others by discipline.
- Challenge is to bring the community together.
- The integration of these 3 is a start.
- We welcome additional input and cooperation.

Conclusion/Contact Information

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